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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,229	12/31/2003	Jin Back Kim	1594.1309	7130
21171	7590	09/20/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			HANAN, DEVIN J	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/748,229

Applicant(s)

KIM ET AL.

Examiner

Devin Hanan

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/31/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 10, 14, 20 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 8 and 14 discuss "a specific direction by the flow guide", but gives no details in the specification as to what is the or how to find the claimed specific direction. Claims 10 and 25 contains the language "predetermined angle" to describe the orientation of the rim, but the specification contains no discussion of how to calculate that predetermined angle.

Claim 20 contains the language "predetermined gap" to describe the distance between the casing and the rotating plate, but the specification contains no discussion of how to calculate that predetermined gap. Correction is requested.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicants' admitted prior art (figure 1) in view of Ozeki et al. (U.S. Patent 6,604,906).

Applicants' admitted prior art discloses a turbofan (figure 1) with a drive motor (5) having

a rotating plate (4) having a front face coupled at a center thereof to a shaft of the drive motor;

a plurality of blades (mounted on 4) radially arranged on a peripheral area of the front face of the rotating plate;

a ring-shape shroud (lower shroud mounted to the plurality of blades) joining to ends of the plurality of blades.

Applicants' admitted prior art does not disclose a flow guide rib extending from a peripheral edge of the rotating plate in a rearward direction to guide air discharged from the turbofan.

However, Ozeki et al. teaches of a flow guide rib (21) extending from a peripheral edge of the rotating plate in a rearward direction to guide air discharged from the turbofan for the purpose of counter flow prevention mean (col. 2 lines 32-35).

Since Applicants' admitted prior art and Ozeki et al. are both from the centrifugal blower art, the purpose disclosed by Ozeki et al. would have been recognized in the pertinent art of Applicants' admitted prior art. It would have been obvious at the time the invention was made to one having ordinary skill in the art to add the flow guide rib of Ozeki et al. to the centrifugal fan of the Applicants' admitted prior art for the purpose of counter flow prevention means (col. 2 lines 32-35).

Regarding claim 2, the modified air conditioner apparatus of Applicants' admitted prior art discloses all of the claimed limitations as discussed above.

Regarding claim 3, the apparatus of Applicants' admitted prior art as modified with respect to claim 1 above discloses all of the claimed limitations with the exception of an outward and rearwardly directed flow guide rib.

Since the applicant has not disclosed that having a flow guide rib extending in a rearward and outward direction solves any stated problem or is for any particular purpose above the fact that that it guides air at a particular angle from the fan and it appears that the outward extending shroud of the modified Applicants' admitted prior art would perform equally well with directing air at a particular angle from the fan as claimed by applicant, it would have been an obvious matter of design to further modify

the rotating plate of the Applicants' admitted prior art to have both the rearwardly and outwardly directed flow guide rib for the purposes of directing air at a particular angle from the fan.

Regarding claim 4, the apparatus of Applicants' admitted prior art, as modified with respect to claim 3 above, discloses all of the claimed limitations.

Regarding claim 5, the apparatus of Applicants' admitted prior art, as modified with respect to claim 3 above, discloses all of the claimed limitations above and a case body (2a), a drive motor (5) fixed to the inner surface of the case body and a turbofan, with a rotating plate (4) having a front face coupled at a center thereof to a shaft of the drive motor (5) and a heat exchanger disposed around the turbofan in the case body (6).

Regarding claim 6, the apparatus of Applicants' admitted prior art, as modified with respect to claim 5 above, discloses all of the claimed limitations.

Regarding claim 7, the apparatus of Applicants' admitted prior art, as modified with respect to claim 3 above, discloses all of the claimed limitations (where axial and radial are equivalent to claims 3 language, rearward and outward, respectively)

Regarding claim 8 (as far as it is definite), the apparatus of Applicants' admitted prior art, as modified with respect to claim 7 above, discloses all of the claimed limitations and a flow guide rib (outer periphery of plate 4) to guide airflow radially outward in a specific direction and is long enough to help straighten the air flow to reduce turbulence.

Regarding claim 9, the apparatus of Applicants' admitted prior art, as modified with respect to claim 7 above, discloses all of the claimed limitations and a rotating plate that is integrally formed with the central hub (4) with a shroud (lower shroud attached to the blades)

Regarding claim 10, the apparatus of Applicants' admitted prior art, as modified with respect to claim 7 above, discloses all of the claimed limitations (with the phrase "inclined at a predetermined angle" being equivalent to the "extending in rearward and outward direction").

Regarding claim 11, the apparatus of Applicants' admitted prior art, as modified with respect to claim 7 above, discloses all of the claimed limitations and circulation holes (arrows through hub 12).

Regarding claim 12, the apparatus of Applicants' admitted prior art, as modified with respect to claim 7 above, discloses all of the claimed limitations.

Regarding claim 13, the apparatus of Applicants' admitted prior art, as modified with respect to claim 7 above, discloses all of the claimed limitations and

a case body (2a),

a drive motor fixed to the case body (5) and a turbo fan (as described in the rejection of claim 5).

Regarding claim 14 (as far as it is definite), the apparatus of Applicants' admitted prior art, as modified with respect to claim 13 above, discloses all of the claimed limitations and a turbofan that uses a flow guide rib (outer periphery of plate 4) to guide

airflow radially outward in a specific direction and is long enough to help straighten the air flow to reduce turbulence.

Regarding claim 15, the apparatus of Applicants' admitted prior art, as modified with respect to claim 13 above, discloses all of the claimed limitations and a flange (8) to attach to the mounting surface.

Regarding claim 16, the apparatus of Applicants' admitted prior art, as modified with respect to claim 13 above, discloses all of the claimed limitations and a heat exchanger (6) which is rectangular and tube shape at the outlet of the turbofan.

Regarding claim 17, the apparatus of Applicants' admitted prior art, as modified with respect to claim 13 above, discloses all of the claimed limitations and a condensation tray (under 6).

Regarding claim 18, the apparatus of Applicants' admitted prior art, as modified with respect to claim 13 above, discloses all of the claimed limitations and a panel with an inlet (7) at the center,

outlets (formed by 8),

a filter (9), and

a guide plate (10) with an opening.

Regarding claim 19, the apparatus of Applicants' admitted prior art, as modified with respect to claim 13 above, discloses all of the claimed limitations and a drive motor with a shaft (figure 1)

a central hub (12) in contact with the shaft, shroud and plurality of blades.

Regarding claim 20 (as far as it is definite), the apparatus of Applicants' admitted prior art, as modified with respect to claim 13 above, discloses all of the claimed limitations with the exception of a predetermined gap between the case body and the rotating plate.

Ozeki et al. teaches of a predetermined gap to suppress or prevent airflow (col. 9 lines 41-45).

Since Applicants' admitted prior art and Ozeki et al. are both from the centrifugal blower art, the purpose disclosed by Ozeki et al. would have been recognized in the pertinent art of the Applicants' admitted prior art. It would have been obvious at the time the invention was made to one having ordinary skill in the art to add the predetermined gap of Ozeki et al. to the centrifugal fan of the Applicants' admitted prior art for the purpose suppressing or preventing airflow (col. 9 lines 41-45).

Regarding claim 21, the apparatus of Applicants' admitted prior art, as modified with respect to claim 13 above, discloses all of the claimed limitations

Regarding claim 22, the apparatus of Applicants' admitted prior art, as modified with respect to claim 13 above, discloses all of the claimed limitations and a restriction of airflow to the drive motor, but still allowing for a flow path to the drive motor (figure 1 between case body and rotating plate).

Regarding claim 23, the apparatus of Applicants' admitted prior art, as modified with respect to claim 13 above, discloses all of the claimed limitations and circulation holes (arrows near 12).

Regarding claim 24, the apparatus of Applicants' admitted prior art, as modified with respect to claim 22 above, discloses all of the claimed limitations and an outlet with a flow guide rib directing flow towards the heat exchanger and is capable of preventing turbulent flow near the outlet of the turbofan.

Regarding claim 25, the apparatus of Applicants' admitted prior art, as modified with respect to claim 13 above, discloses all of the claimed limitations (with the phrase "inclined at a predetermined angle" being equivalent to the "extending in rearward and outward direction").

Prior Art

The patent to Kim et al. (U.S. Patent 6,558,120) is cited for its disclosure of a ceiling mounted turbo fan air conditioner.

The patent to Poslusny (U.S. Patent 3,842,902) is cited for its disclosure of a fan and casing of a fan having rims extending to reduce recirculation to the inlet zone (col. 2 lines 18-21).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devin Hanan whose telephone number is 571-272-6089. The examiner can normally be reached on Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on 571-272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Devin Hanan
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9/19/05